

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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34TH REGULATORY INFORMATION CONFERENCE (RIC)

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TECHNICAL SESSION - TH22

EMERGENCY RESPONSE DURING COVID-19: LESSONS FROM

HURRICANE IDA

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THURSDAY,

MARCH 10, 2022

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The Technical Session met via Video-
Teleconference, at 8:30 a.m. EST, Scott Morris,
Regional Administrator, Region IV Office,
presiding.

PRESENT:

SCOTT MORRIS, Regional Administrator, RIV/NRC

LINDA GEE, Radiological Emergency Preparedness

Program (REPP) Senior Site Specialist, Region

6, National Preparedness Technical Hazards

Division, REPP, Federal Emergency Management

Agency (FEMA)

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RYAN LANTZ, Director, Division of Reactor Safety,
RIV/NRC

OSCAR MARTINEZ, Branch Chief / Regional Assistance
Committee (RAC) Chair, Region 6, Federal
Emergency Management Agency

JOHN OVERLY, Emergency Preparedness Manager --
Waterford Nuclear Generating Station, Entergy

BRIAN PARKS, Senior Emergency Response Coordinator,
Response Coordination Branch, Division of
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REBECCA RICHARDSON, Chief, Intelligence Liaison &
Threat Assessment Branch, Division of
Security Operations, NSIR/NRC

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P-R-O-C-E-E-D-I-N-G-S

8:30 a.m.

MR. MORRIS: Good morning, everyone, and welcome to Day 3 of the NRC's Regulatory Information Conference. My name is Scott Morris. I'm going to be facilitating this morning's session. I am NRC's Regional Administrator for our Region IV Office based in Arlington, Texas.

Today we're going to be talking about emergency response during the COVID-19 public health emergency. And specifically, lessons that we all learned and we want to share with you about our real-world response to Hurricane Ida, which many of you know had a significant impact in Southern Louisiana late last August, early September. Specifically, the Waterford nuclear power plant.

Today we're going to be sharing our insights and lessons learned during the response to Hurricane Ida, given the ongoing COVID public health emergency.

So let's go to the next slide, please.

Okay. This is just a quick agenda of what we're going to be going on. Again, the goals today are to discuss the noteworthy and unique

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aspects of our response to the hurricane, and share lessons learned.

We're going to start with some introductions of our panelists today. I'll provide some context, a couple of photos, and then we're going to engage in what I think should be a very interesting panel discussion.

Next slide, please, and we'll do some introductions.

Today with me we have Mr. Ryan Lantz. Ryan is the Director of the Division of Operating Reactor Safety in NRC's Region IV. He was one of NRC's response directors during the event.

Also with us is Rebecca Richardson. She's the Chief of the Intelligence Liaison and Threat Assessment Branch back at NRC Headquarters.

We also have Mr. John Overly, who is an Entergy employee and happens to be the Emergency Preparedness Manager at the Waterford Steam Electric Station.

We also have Oscar Martinez from FEMA, Federal Emergency Management Agency, Region 6, based here in Texas. He is the Chair of the Regional Assistance Committee for FEMA.

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Finally, we have Ms. Linda Gee, who is also a FEMA Region 6 staff member. She's the Senior Specialist and the Lead for FEMA Region 6 for the State of Louisiana.

So please welcome our panelists.

Can I have the next slide? All right. So just to set a little bit of context, you'll recall Hurricane Ida was a very significant hurricane that, when we were initially tracking it, was projected to make landfall in Louisiana and continue inland, potentially affecting three different commercial nuclear power plants, in addition to obviously all the other infrastructure.

So, obviously, like we always do, the NRC and licensees were actively engaged in preparations for that hurricane potentially making landfall and passing over their sites.

You can see how the storm intensified over time on Wednesday, the 25th of August. It made its original hurricane classification at 80 mph. It was a Category 1 hurricane. And you can see as it began to track closer and closer to the United States mainland, it intensified over the days until eventually reaching a Category 4 storm, which was

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very significant; 145 mph winds on Sunday morning.

Next slide, please. On the 28th, which was Saturday, was when we first learned about the forecast of hurricane-force winds actually being present on the Waterford site.

Sunday morning, consistent with their procedures, the licensee proceeded to shut down the unit and cool it down. Obviously, that's the safest condition for the plant to be in, given the impending storm. And by around 10:30 on Sunday morning, the unit was in fact shut down. The unit was off the grid, and they began their cooldown of the unit.

By around noon, the hurricane made landfall as a Cat 4 hurricane at 150 mph winds. Later that evening, the maximum winds reached the Waterford site. They experienced a loss of off-site power, so the unit no longer had off-site power to assist in the plant cooldown and maintain the unit in a cooldown condition. So they had to rely on their own power sources on-site.

At that point they declared a Notice of Unusual Event, which then precipitates a call among the NRC, executives including myself, and then we make a decision as to what posture we want to take as

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a federal organization to address the impacts of the storm.

Next slide, please. So here you can see just a little bit more timeline. Waterford officially notifies the NRC of the loss of off-site power event and their entry into an unusual event condition.

We made a decision as an agency to enter what we call the Activation mode, which is essentially standing up our emergency response organization, and having real-time communications amongst ourselves, with the licensees, and other response entities.

Later that evening, the hurricane-force winds had begun to subside. But it wasn't for a couple more days until the licensee exited the unusual event. And we'll talk about that and what were the exit criteria for that.

The NRC remained in Activation mode for a few days. And it wasn't until September 1st, which was a Wednesday morning, that we finally exited the Activation mode.

Next slide. So here's just a couple of pictures. There really was not a lot of damage,

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really no damage, to any of the safety-related systems, structures, or components at the site, which is good news.

The bad news was there was a lot of infrastructure damage around the site, resulting in the loss of off-site power. But also, damage to some of the non-safety-related systems at the site, and certainly impacts to buildings, structures, and other things. We'll talk about that some more, as well. But the impacts were limited primarily to the structures that weren't essential to plant operations or maintaining the unit in a shutdown and cooldown condition.

Next slide. Here's some more pictures. The photo on the upper right shows some damage to the site's low-level radioactive waste building. You can see it took a pretty significant beating there. No safety-related equipment, however. And the radioactive waste contained within the building stayed in the building.

The photo on the lower right is actually part of the intake structure. This is out on the Mississippi River. This is intake water for the main condenser cooling, not for safety-related cooling.

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But it encountered some substantial damage.

You can see there's a piece of the weir wall that's missing. And those structures that kind of look like tripods -- I believe they're called dolphins, and they're meant to keep large debris, ships, and barges from impacting the intake structure -- they got beat up a little bit too.

Next slide, please. This is just some internal damage to some of their on-site buildings. You can see ceiling tiles missing, windows damaged, et cetera.

Next slide. This is a pretty vivid slide here, as you can see. This is on the access road on the east side of the plant. You can see the containment building for Waterford in the background. And you can see how after the winds have subsided and the sun came out, what some of the damage looked like out on the road and in the community.

With that, go to the next slide. We will actually, if we could, just bring up the panelists on the screen.

I'm going to start with Ryan Lantz. Ryan, given all that I've talked about contextually, what did you think made this event unique?

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Obviously, hurricanes are not uncommon, and they certainly have affected power reactor sites in the past. But what made this one unique, in your view?

MR. LANTZ: Thanks, Scott. Good morning.

As Scott said, hurricanes are not unusual for this part of the country. Waterford has certainly seen its share of hurricanes. Hurricane Katrina from several years ago was comparable to this hurricane. But this one was a little interesting in that it rapidly escalated in its intensity and didn't necessarily exactly follow tracks, but it was a big hurricane.

The damage that this hurricane caused, the winds were pretty much second to none. If you go all the way back to Hurricane Andrew in '92, the winds are comparable. So it had been 20 years since we saw a hurricane with this kind of wind force at a site.

And what was remarkable with that, as Scott went over in the slides, there was a lot of damage in the infrastructure. There was power lines sitting in the Mississippi River. There was loss of off-site power, of course, to the site. There was

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significant damages, as FEMA may talk about, off-site. But on-site, the safety-related structures, the support needed to keep the plant cooled and safe, they were unaffected.

There was some affect to the security systems and monitoring systems at the site. But physically, the site weathered 140 mph sustained winds just extremely well. So that was a bit of a surprise, how little damage there was to the site structures.

So as far as a hurricane goes, it was a pretty remarkable hurricane, and that it actually affected the sites directly.

MR. MORRIS: Ryan, I should have mentioned, I believe this is true. The winds at Waterford during Hurricane Ida, I believe, were the highest recorded winds on a power reactor site since Hurricane Andrew back in 1992 at Turkey Point.

MR. LANTZ: Right.

MR. MORRIS: So yes. Extremely high winds, and yet little damage to any of the safety-related structures.

MR. LANTZ: It was pretty remarkable. We were expecting, or I guess planning for the worst,

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because it was such a strong hurricane at the site.

So that's talking about the hurricane. And I don't know if, Scott, you wanted to go into the response and what else was very unusual about it at this time. But the hurricane itself, pretty remarkable.

MR. MORRIS: We'll circle back to that. Let me invite other people to weigh in on this question. Maybe Oscar from FEMA? Welcome.

MR. MARTINEZ: Good morning. Thank you for having us on today's panel.

For sure, one of the unique things for FEMA and this particular hurricane was the fact that we were also coinciding with a pandemic that had been gripping the whole United States. So not only did we have Ida to deal with, but we also had some concerns with the ongoing pandemic and how we were going to get our team of folks in there to do what we generally do, prior to hurricane and then also after hurricane for response purposes.

So it was significantly different for us. At FEMA we needed to change, try to innovate, and do some things that we hadn't done in the past as far as our DIR response processes and such like that.

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And then obviously, like was said by you all, the amount of damage that we had seen because of Hurricane Ida prevented a lot of ability to gain access to certain facilities, off-site facilities and such like that. So it was definitely a different or abnormal hurricane response that we had for this.

I'll throw it to Linda. Linda Gee is our senior site specialist for Waterford and for the State of Louisiana. Let's see if she has any input on that.

MR. LANTZ: What I might add is normally, in the past, historically, we were able to get moving, get down to the area, and start planning for a DIR. In this case, with everything going on with the pandemic and the damage, we were prepared to move. But then we had other issues we had to deal with.

We had hotel rooms. We were able to move forward. But then there was the issue about logistics. What do we do about fuel? There was quite a bit of damage. We weren't sure if we could get in and talk to the parishes. There were just a lot of questions.

So we remained back at Denton, actually at home through teleworking, and decided to go ahead

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and conduct the DIR virtually.

MR. MORRIS: Linda, thanks. Some people may not know what a DIR is. It stands for a disaster-initiated review. And that's something that FEMA will do after an event like this one to provide assurance that the off-site infrastructure is able to support operation of the nuclear power plants in case there should be any emergency response needed.

I want to turn now to John Overly, the Emergency Preparedness manager at Waterford, and ask him to share with us what insights or surprises he had relative to this particular event. Because Waterford has been subject to other storms in the past, including Hurricane Katrina back in 2005.

So John?

MR. OVERLY: Thank you, Scott. From my perspective, really it's two-fold. One, as Ryan alluded to and talking quite a bit about with the storm, the intensity, the change in the tracks. Because up until two days before it came to us, it was predicted to go much further west of us. The quick change and the speed in which it intensified really took us a little bit off guard. It came towards us quicker than we anticipated.

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And then once it got here, and I know Linda and Oscar saw this in the off-site activities and inspections, the storm sat on us for a very long time. Normally, hurricanes will just continue and go along its path. But this one sat on us for about four or five hours.

So you're talking about 140 mph winds for sustained periods of time, literally hours. With the swamp areas around, it kept staying at that same intensity because it was regenerating itself before it finally moved off.

Anybody that saw the pictures of St. John, St. James, or St. Charles Parish outside of the Waterford plant knows exactly what I'm talking about. It was a lot of devastation of key infrastructures that are out there required for basic living.

The second part really was, because of COVID-19 we were already -- all of us were in COVID-19 protocol. So ahead of the storm trying to prepare, we sequestered personnel on-site. And then you're trying to implement COVID controls and protect them while they're on-site sequestered.

One of the things we learned is taking a hard look at our sequestration roster. Over the

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years it tends to inflate because it's, well, this would be nice to have; this would be nice to have.

And then when you get back down to it, what is it that you're really trying to do? What's the minimum staffing that you really need to support the ongoing response prior to, during the hurricane, and then some of your immediate actions just shortly after the hurricane?

So really we're looking at -- you stabilize the plant. We shut down. We stabilize the plant. You're looking at maintaining stabilization of the plant until you get your full staffing back in and really assess the damage. So we had to take a really good look at that.

Our footprint inside the protected area is a smaller one. We put people up, let them sleep, and then do some other things. So the logistics presented a little bit of a challenge implementing COVID-19 controls. But I believe we came up with a really, really good solution.

We really worked a lot with our corporate staff and lessons learned from others. We worked with our FEMA and NRC partners to talk through a lot of these activities.

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And I think one of the things that we did a really good job is engaging all the organizations early and frequently, including the state, the parishes, FEMA, NRC. We all rolled up our sleeves and really started preparing for this. We were prepared maybe three days out for a slightly different response. And then as it got closer and closer, we had to check and adjust as we went.

So those are the two big points, intensity of the storm and the rapid changes in it, and the COVID-19 impacts that we had in that.

MR. MORRIS: Thanks, John. You mentioned something about rolling up sleeves, early communication, and working together.

I'm going to go back to Ryan and ask him to sort of compare and contrast the -- well, let me start by saying this. Obviously, the NRC is a nuclear regulatory authority in the United States. And we typically make decisions based on a thorough, deliberative process that takes time and involves a lot of folks, including the public.

That's not the mode we're in when we're in a response mode. We're in a completely different role. We're in an operational role. We're

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potentially dealing with incomplete information. That's standard and that's expected.

But I want to ask Ryan, given that context, how did the agency's response differ in this particular event than what we would "typically" see? And typical is in air quotes.

MR. LANTZ: Thanks for that question, Scott. As John was talking, I had a thought about our initial response.

Just for everyone's information, when a hurricane is predicted to affect a nuclear power plant, our normal response is to take care of the residents, the NRC inspectors who are stationed at that plant. There's always at least two. And we allow them to leave the plant, go home, potentially evacuate the area, protect their families. That's a high priority.

Then we will send a volunteer, a very knowledgeable NRC inspector to the site, typically two people to the site to basically be on-site, sequester with the licensee, which we did this time. But because of COVID considerations, we sent one senior inspector, actually from the Arkansas Nuclear Plant, to the site to sequester with the licensee,

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monitor activities, and assist where he could.

So that was a bit different. We didn't send two people, although we had others in the area and others ready to go. And later on, a couple of days into the event, we actually did send another inspector to look at security issues, and then another inspector to relieve the first inspector who was at the site. So just a little bit different.

Otherwise, this, as you know, was the very first time that the NRC went into an Activation mode for an event at a site in a fully virtual environment. So that was very different.

But I think that helped, specifically, with communications because we were all in the response almost immediately. We didn't have to get in our cars, drive to -- because this was Sunday night when we activated. We didn't jump in our vehicles and go to our response center in Arlington, Texas, which would have taken pretty much a minimum of 30 minutes more for some folks. We were immediately in Activation. We had folks supporting.

And when I looked back over some of the communications, I noted that our state liaison officer who interacts with FEMA and our public

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affairs officers, they were both engaged very early with their counterparts and with FEMA. And we were talking about the potential for a disaster-initiated review need very early in this scenario, very early in the event.

Whereas before, just like I think Linda mentioned, we would take our state liaison officer who works with FEMA and participate in that disaster-initiated review. He would have to make travel arrangements, get to the local area in any way possible, and then meet up with FEMA. Well, he was automatically engaged with FEMA from the very start.

So I think that facilitated a very rapid disaster-initiated review, which was another surprise. That was able to be completed very quickly. So that was a bit of a different response.

And as far as other communications, one thing I found interesting is, we were following our procedures in this first time using an Activation in this manner. And because the Activation did not directly involve all Headquarters staff -- normally we would have the Commission involved.

In our old response mode, they would head up the response one we go to Activation. And then

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the region would get ready to go to the site, or take over if we need it to.

The Commission was not directly involved. And so it was almost an afterthought to make sure the Commission was kept informed of what we were doing in the response. We actually got some questions during the response. "Hey, what's going on," in the response. So that was kind of an interesting aspect, when normally they would be directly involved.

We did put out periodic reports that summarized what the response was. That got emailed to lots of folks. It was on WebEOC. It was shared very broadly and I think was very useful. But the aspect of communication to all folks was almost a second thought, in some respects, whereas before in our response mode it was automatic because everyone was in the same room, including Headquarters.

MR. MORRIS: Thanks for that.

And I want to invite Rebecca to weigh in here. Were there any surprises from your -- you're obviously based at NRC Headquarters. What was your role in the response, and were there any surprises for you, particularly given the fact that we were in a COVID environment?

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MS. RICHARDSON: Yes. Thanks, Scott. I'm a volunteer responder for our security group. And then for this event specifically, I was in a support role to Region IV, to the security lead.

This was actually my first time responding during a hurricane. But I have lived through a few of them myself, and I know that they can intensify pretty quickly. That changes what your response looks like, whether it's deciding to evacuate your family or preparing the plant.

And as everyone's mentioned, there was the added layer of the COVID-19 public health emergency. So for us at the NRC, we were responding primarily from home rather than in the Operations Center.

On one hand, as Ryan mentioned, our response was quick. I think it eliminated some of the challenges that come with staffing shifts of people in the Operations Center. But on the other hand, our reliance on communication technologies became even more important when you can't just get up, walk over, and tell someone something.

So for me, it really reinforced the need to ensure we're regularly maintaining and training on

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all of our various communication systems. That was probably my biggest takeaway from the COVID aspect of it and not being in the Ops Center.

MR. MORRIS: Okay. Thanks. John, I'm going to go back to you. What was your focus? After the storm had passed by, what was your focus at the site? There's a bazillion things going on, but how did your organization decide what the main focus areas were?

I'm particularly interested in off-site support. What support did you request/need? What priorities did you express to the federal and state governments?

I'm sure the state was real interested in getting power back to the grid, too. So maybe you could talk through that a little bit, particularly if there were any unique or surprising aspects.

MR. OVERLY: Okay. Thanks, Scott.

MR. MORRIS: And by the way, before I let you answer, I apologize. I want to invite the audience to use the tool and ask questions that you have. They can be specific or broad, and they can be to me or any of the panelists. So I do invite you to ask questions.

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I'm sorry, John. Go ahead.

MR. OVERLY: That's fine. I'll talk about a little bit before the response.

One of the things we did also was, we'd been embracing the probability of one. So while the storm was not initially predicted to come our way, using the probability of one, we actually made the decision to sequester personnel on-site very, very early.

So we were able to get all of our sequestration families and all of our teammates out of harm's way much earlier than what we normally would have. So that put us in a really good spot to be able to respond back.

Now, once the storm was over, obviously we had a loss of off-site power. You all saw the pictures of the devastation on the support facilities around the site.

We're in competition with other critical infrastructures: hospitals, nursing homes, emergency response facilities, relocation centers, things of that nature, law enforcement facilities. So there's a lot of things that we're competing.

And we're asking, okay, we want to get

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power back to the Waterford site, but we also need to save people's lives. There's always that.

So we're working really closely. We started prior to the storm and during the storm -- you've got to be lockstep with the transmission, distribution, and the utilities around the area to make sure that we're really studying the priorities of where we're going. So the parishes in the state and the utilities all worked together to have a lot of really good calls on what the prioritization of power restoration was going to be.

For us, getting some of our support facilities back. How are we going to get people back on-site? So we started working with logistics.

Our main concern and main priority was getting the generators brought in to bring back the facilities. In particular, our Maintenance Support Building, which houses our Outage Coordination Center, and it's also our Operations Support Center; our Generation Support Building, which houses the vast majority of our engineering organization; and our Maintenance Building with all the craft personnel.

So trying to get power back to that so

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that we could get some semblance of normalcy to be able to respond, including our work control center as well.

So then the logistics were, we were going to be without power. We knew we were going to be without power in most of the area for a very long time. The initial estimate was seven to 14 days.

So now the logistics are, if we can't bring people inside, how are we going to let them sleep; how are we going to feed them; how are we going to have the sanitation services? So having all of those logistics of bringing in trailers. We brought in 30-plus trailers to house personnel on-site.

We're fortunate that back in the Hurricane Katrina area, we actually had an area where we set up and where we brought in campers. So we were able to -- before the storm, we made sure that that area was fully available again. People who had their own campers, motor homes, and stuff like that were actually able to respond to the site and hook up there as well.

So just kind of getting our feet back under us for a little bit of a normal organization, just to go back and start restoring power. So those

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were really some of our main logistical things.

The other thing is, what I'll say that we really need to do and make sure that we do is, we were running a long time on the emergency diesel generator. So we were working through getting fuel oil from Baton Rouge here.

And if anybody knows anything about the emergency diesel generators, that's pedigree fuel. It requires sampling. It requires pedigree.

So having those contracts in place to have the sampling already done so that it can be loaded on trucks and get to us, instead of waiting to go there, sample it, send it off, wait for the results, and then bring it on-site.

Working those details out well ahead of hurricane season start is a really good lesson learned that people should really hang their hats up on. Make sure you have all those contracts in place.

And again, I can't overemphasize transmission and distribution. They deal with storms for a living. They're out for every thunder storm, every cold weather event. Their logistics and their ability to get logistics in is really on par with no one, with the exception of maybe FEMA, who does this

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all across the country and stuff like that.

MR. MORRIS: Thanks, John. I want to throw it over to Oscar and Linda. FEMA as a large organization, as John just pointed out, has a responsibility to provide effective coordination and response of federal assets, working with the states, et cetera. I can certainly imagine that FEMA had a number of competing priorities during the event and subsequent to the event.

Maybe, Oscar and Linda, you could talk about what some of those competing priorities were, what maybe some of the pressures were from different stakeholders, and how you worked through that?

MR. MARTINEZ: Yes, sir. Thanks again.

So yes, there was definitely a lot going on during that time period. Here at FEMA we've always tried to be very flexible. Obviously, that's a key for our preparedness environment at FEMA. We've always been on the ground and able to change in doing some things.

There were a lot of competing priorities, like you said. One of the ways that we tried to prepare ahead of time for those competing priorities is we do a lot of pre-hurricane calls, pre-hurricane

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trainings throughout the year, prior to hurricane season. We do a number of hurricane calls, not only with the NRC but with our state, local, and tribal areas, stakeholders, and such like that. So all year long, we're definitely preparing for the event that could occur or that may occur sometime during hurricane season.

Some of those priorities, like we were discussing, the political climate obviously is key. One of the things that took place during Hurricane Ida was, there was quite a push politically to get this disaster-initiated review done as quickly as we could. And we were able to do that.

Again, for FEMA, this virtual disaster-initiated review was the first of its kind for us at FEMA. One of the bittersweet side effects, I guess, of COVID was that we already had been used to a virtual environment for quite some time. We'd been doing a lot of things virtually in other aspects of FEMA.

So during Hurricane Ida, when it came time to innovate and try to pivot to view the disaster-initiated review from a virtual environment, it was -- I won't say it was easy because it

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definitely wasn't. But we were able to do that with as little problems as we could.

Again, because the state was in such need to get that disaster-initiated review completed, we were able to do that from a virtual environment. We leveraged a lot of social media, different avenues of social media to help us gather a site picture.

There was a lot of folks in the State of Louisiana that were using a lot of social media, different platforms. They were posting various photographs and different things of different areas in Louisiana that had been damaged.

And those were actually very good tools for us to use from a FEMA aspect, because it did allow us to take a look at different locations. And site visits that we normally would try to do in person and boots on the ground, we were able to do virtually, and request other videos or photographs of different sites that we needed to take a look at. And Linda can talk a little bit about that.

But yes, there was a lot of competing priorities. COVID was still very active. It was a very concerning situation.

That was one of the things that we were

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having to consider as we were trying to consider getting individuals into the State of Louisiana to conduct that disaster-initiated review. Some of that was how we were going to do that along with the COVID protocol. So again, just another reason for us to conduct that disaster-initiated review from a virtual environment.

Linda, I don't know if you have any other --

MR. MORRIS: Yes. I was going to ask Linda to explain a little bit. What is a DIR, and why is it important?

MS. GEE: Well, we initially -- FEMA loves their reports. We begin with a preliminary capabilities assessment, and I started with that. Early on, I had that framed.

Of course, that triggers the disaster-initiated review. At that point, there's about ten questions on a capabilities assessment. We did realize we needed to go ahead and do the DIR.

Now, what we had to determine was how we were going to do the DIR. And we weren't certain. Are we going to Louisiana or not?

Well, with everything going on at the

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time, we decided to do the disaster-initiated review remotely. And as Oscar pointed out, we started early on. We started back on August 27th with coordination calls.

Social listening was done throughout. I was able to get information on a lot of the facilities around Waterford. The state was able to provide information, both LDEQ and GOHSEP. And then they were able to follow up with information from the parishes.

So the disaster-initiated review, once we were able to get all the information where we could present it for reasonable assurance, it probably took me about four hours to get the report done. So we were able to pull that together and push it up to leadership to review.

Do you have any other questions on the -

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MR. MORRIS: I think the audience might be interested in understanding a little bit. Why is the DIR -- why is that process so important? And why did FEMA lean into it so hard early on?

MS. GEE: Well, it's FEMA's reasonable assurance letter. And I'll let Oscar jump in here.

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MR. MARTINEZ: So those DIR teams that consist of FEMA and RC regional staff, we conduct those DIRs in order to coordinate with our off-site response organizations to ensure that we conduct that DIR in a timely manner, and it doesn't detract from any lifesaving responses or things that are going on initially.

The DIR review, it covers emergency response facilities, communication, emergency response organizations, the public alert notification systems. It covers things such as transport, evacuation routes, accident assessment capabilities, the support services that are available, and the different population shifts.

It's so that we can ensure that the off-site organizations, they can respond in case of a plant emergency or anything like that. So that's essentially the reason that we conduct those DIRs.

MR. MORRIS: Thanks. Thank you for putting that into context there.

John, I want to ask you, from your perspective, the federal government and its response -- and that's the bigger federal government, not just FEMA, not just NRC, but all of us working together -

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- what was your perspective on the level of support and interaction that your team had from the federal government, whether conveying priorities and needs, timeliness of response, et cetera? Can you comment on that?

MR. OVERLY: Absolutely. I've been through a few hurricanes in the Carolinas, but this was the first major one with a direct impact to the site.

We've got a really, really good working relationship with the region, FEMA, the NRC, our state, and the parishes. In other words, we know each other. And I think the familiarity and the up-front work that Oscar, Linda, and Ryan have talked about where we meet face-to-face, we talk with each other, I think you build those relationships. And I know everybody has their part from a regulator to a utility, but actually knowing each other and being able to communicate was really good.

For us, now we're throwing in the Coast Guard. The Coast Guard was critical with some of the responses. Ryan talked about, and you talked about, a power line down. The Coast Guard's controlling that, and so is Department of Transportation. So

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there's a lot of federal agencies that come under that umbrella of response.

Anything we asked for, we got. Anything they were inquiring about, we were able to provide them, because we understood what kind of questions were going to come. So we were prepared with the answers.

Really our federal plans, state plans, local plans, and our utility plans mesh pretty well together because we've worked on them over the years. While this hurricane threw a little bit at us earlier, the damage was a little different, and we had to kind of adjust on the fly, the processes and the people we have in place facilitated a much smoother response in dealing with the uncertainty that we came up against.

MR. MORRIS: Thanks. I think it's fair to say that all of us were interested in getting power back to the grid as soon as possible, because obviously there was pretty significant damage and people were without power.

And of course, the City of New Orleans requires power to de-water the city. So it's a really important thing. And it wasn't lost on anybody, this push and desire to get power back.

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But for us and for FEMA it's, how do we do that and ensure safety? We don't want to put the public at any further risk by expediting a plant's return to operation.

A question maybe for Ryan. Ryan, we've talked a little about this, this notion of NRC response modes. We've got a question from the audience. Maybe you could elaborate a little bit.

What does Activation mean? What does that look like, and why is that significant?

MR. LANTZ: Yes. Thanks for that question, Scott.

Before I get to that, I did want to put a little context on the disaster-initiated review. We rely on FEMA. The NRC relies on FEMA essentially to tell us that after a plant has to shut down because of some event, some external event, they tell us the off-site support for operating that plant is intact, is capable of supporting.

The safety of the plant is always with the licensee. They are fully responsible for ensuring they operate a plant safely. So Waterford, in this case, before they restarted the plant and maintaining it in a safe condition while they were

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shut down, that is completely the responsibility of the licensee.

The Nuclear Regulatory Commission, our responsibility is to ensure that the licensee is operating safely. So we monitor. We have folks on-site.

And this one, we talked about restoration of off-site power. I just want to make sure everyone understands that the restoration of off-site power was very important. And that happened fairly quickly. We were surprised how quickly the plant was able to find a pathway to bring power back to the plant.

But that doesn't necessarily mean that it's a reliable source of power, and that it would meet our standards for ensuring the plant could operate safely. So there was a ten-hour period following restoration of off-site power to the site that the NRC was continuing our evaluation. And one of five criteria we use to exit from Activation was that there was a reliable source of off-site power to the plant.

MR. MORRIS: I want to get to the exit criteria in a bit. Just for the benefit of the

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audience, what is Activation? Why is it different? Who makes the decision? That type of thing.

MR. LANTZ: Sure. So when an event occurs at a plant, NRC decision-makers have a phone call. We're notified by our Headquarters Operations officer, who is 24 hours a day monitoring. They're required to get phone calls from the sites when certain events occur. And then a phone call is made.

In this particular case, the decision-maker for that is the Regional Administrator, who has oversight of that plant. And he also consults with the Nuclear Reactor Regulation representative who is on the phone, and gets essentially concurrence with going to an Activation mode.

And what Activation does is it sets the NRC into this response mode where 24 hours a day we have individuals dedicated to analyzing the situation, looking at the plant, communicating with the plant, and off-site authorities.

So we are in a mode where we have full communications. We're assessing. We assign individuals that are needed depending on what has occurred at the plant. And then we also are preparing, if we need to, to send a larger number of

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folks to the site itself. So that's another part of Activation.

MR. MORRIS: Thanks for that. One of the key elements of being in Activation for the NRC, of course, is to be able to provide that independent assessment, that independent assurance that the licensee -- that they've thoroughly evaluated the event, that they're anticipating what might happen next, that they are taking all the appropriate mitigation actions, et cetera.

So the NRC's role is, obviously, to make sure from an independent viewpoint, with its own eyes and ears, its own staff, making sure that the licensee is doing all the right things.

But also, in a support role; also saying, hey, how can we help? And also providing advice to other off-site, answering questions from the public, et cetera, and basically coordinating the entire federal response to support the unit.

So thanks for that. I did get a question for John Overly about what the sequence of events was relative to the hurricane moving closer and closer to the site, mode changes. And what happened at River Bend and Grand Gulf, since they initially were in the

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path of the storm?

And was the FLEX equipment -- FLEX equipment is installed, obviously, at Waterford and other power reactor sites. To what extent was that equipment used or deployed?

MR. OVERLY: Thanks, Scott. I'll just kind of touch on that. Grand Gulf, River Bend, and Waterford, we had utility calls between us from our storm response calls. The other two sites were preparing because we believed it was going to be west of us. So those other two sites would be impacted; Grand Gulf to a lesser extent.

Once it turned our way and was going to be much less of a threat to River Bend, they kind of backed off some of their requirements. But we all have the same common severe weather response procedure. We were all entering those procedures. And River Bend prepared for sequestration but they did not need (audio interference) FLEX equipment.

We do have some FLEX equipment, because of the unique characteristics of our site, that are staged in other locations. For example, we have basically a permanently installed emergency diesel generator that can help us with a loss of off-site

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power, in addition to the emergency diesel generators, versus having to rely on grabbing a FLEX generator to come in.

So those are some of the logistics that we had. I think I missed another part of the question.

MR. MORRIS: Yes. It had to do with mode changes. I think we kind of covered it in the time line that I went through at the beginning.

But obviously, the most important thing is that the unit went from Mode 1 operation down to Mode 4, which is shutdown and cooldown, pretty aggressively, starting on Sunday morning when landfall was made by the hurricane, and it became clear that the site was going to get some excessive wind and excessive storm activity at the site.

MR. LANTZ: I'll just add that both River Bend and Grand Gulf were able to stay at full power throughout this event, even though they were preparing for a shutdown if needed.

MR. OVERLY: Scott, I'd like to add just one thing. We talked about all the great things, the great outcomes with the disaster-initiated review being the first full virtual one, how we were able to

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quickly come to that conclusion while we want to bring power back to the grid.

But we also have to remember although Waterford was prepared to start up, we actually delayed connecting to the grid because the grid was not ready for that power that we had. So it's okay for us to generate power, but if we have nowhere to send it or ability to transmit it, then our homes aren't able to receive it. So that's actually something we have to think about as well.

So you have your time and you step through. If there's a critical need, yes, we get it back up and online. But we also have to delay and allow the grid to handle the capacity.

MR. MORRIS: Thanks. And Ryan and Rebecca, maybe weigh in, too.

Obviously, in our role as independent assessors and trying to be supportive of the site, the NRC also is still a regulator. And if the site decides that it wants to restart the unit, there are some regulatory requirements that have to be met. The NRC is going to make sure on behalf of the public that those requirements are met before the licensee decides to restart the unit.

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Aside from off-site power, were there other issues of concern that you dealt with as a response director -- or Rebecca, in your role -- that gave you concern about the licensee's return to operation?

MR. LANTZ: Yes. I'd like to let Rebecca address this specific aspect. NSIR is a pretty focused organization, so I think you have an aspect there. And then I'd like to cover some broader items that we had consideration for.

MR. MORRIS: Sure. Go ahead, Rebecca.

MS. RICHARDSON: Thanks, Scott. Thanks, Ryan. I would say in the security realm you aren't just thinking about, what if part of my security system stops working temporarily. But instead, what if it's just blown away completely, and how this could extend your time frames for needing to have compensatory measures in place, which are requirements.

I think the beauty of the in-depth strategies is that they are prepared for that. But in the midst of a public health emergency, it definitely adds layers of challenges to work through, from both the personnel perspective and the supply

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chain, to restore equipment.

One of the, I think, biggest takeaways for me was how this experience really highlighted the importance of that safety/security interface, which is another requirement we have.

And while natural phenomena like the hurricanes are not the same initiating event as, say, a physical attack, the physical protection programs are in place and are set up to compensate for those degradations in operability, regardless of the mode of failure. So I think those are two big aspects for us.

MR. MORRIS: Yes. Maybe we didn't say this directly, but the security systems at the site, which are obviously required by NRC regulation -- we didn't talk about this much, but the security systems at the site were impacted fairly substantially.

So I think what you're describing is, it's not just about getting power back to the site from the grid. But also, making sure that all the other infrastructure that's needed to support plant operations, including security systems, is available and reliable. And that was, I think, an interesting challenge, not only for the licensee but also for us

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as we tried to do our independent assessment.

MS. RICHARDSON: Yes. And as Waterford did, it's important for the security organization then to remain an active participant in the licensee emergency plans. They staff security emergency responders in the Technical Support Center and Operational Support Center.

So this allows them to ensure that security is aware of any emergency conditions in real time, allows them to assess any potential adverse security impacts, and then support the plant safety and emergency action. So I think that that's a key piece of the interaction there.

MR. MORRIS: Thank you.

MS. RICHARDSON: Yes.

MR. MORRIS: Ryan?

MR. LANTZ: Yes. As I mentioned earlier, the licensee has the responsibility to operate the plant safely. But the NRC is charged with ensuring that it's done. And part of our being in the Activation mode meant that we had questions. We wanted to be able to respond quickly.

Prior to our exiting Activation, standing down our 24-hour response mode, we did establish five

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different criteria. And just real quickly, I'll talk about those.

First, we already talked about that we wanted to do an independent assessment of the security posture of the site. And that was done by sending an inspector down, consulting with NSIR, that office. So the security was really one of the top priorities.

The next is, we wanted to make sure that we had good communications with the site, because early on they were a little iffy. We wanted normal communications as well as emergency communications restored; a big, important thing.

The next was, we wanted to make sure that we could reliably get NRC staff to the site. There was still a mess on the roads. It was hard to get around. We wanted to make sure there was a good path that we could continue to get NRC presence on the site.

The next had to do with off-site power. The plant operates using technical specifications. And of course, the Code of Federal Regulations drive requirements that must be met for a plant to operate. Our charge is to make sure those are met prior to the

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plant continuing, and certainly before the plant starts up. So that priority, did they have a reliable source of off-site power to continue operating the plant.

The final criteria had to do with, have we communicated well enough off-site, to the public to ensure there was a good understanding of why we were exiting from Activation, and essentially allowing the plant to start up when they chose to start up.

So five criteria. They were all met, but it took quite a bit to make sure we had that.

The NRC, at any time if we feel like the plant is not in a safe mode as conducting, we do have the authority to tell the site, no, you cannot start up. You must remain shut down. That's within our regulatory authority.

And we can do that essentially if we don't have confidence that there is safety. Even if all the tech specs are met, technical specifications, and we can't point to a specific regulation that isn't met. If we don't have confidence, we can tell a site that they cannot continue operating.

So I hope that answered the question,

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Scott.

MR. MORRIS: Yes, I think so. I appreciate that. One of the questions that I've received from the audience is that it sounds like things went pretty well overall, given the significance of the hurricane. It went as well as could be expected at the site, for the licensee, at FEMA, and NRC responders. And I think that's generally true.

I'll open it up to anybody. Was there anything that really didn't go well or it wasn't anticipated that you had to deal with, and how did you overcome it?

I'll just open it up to anyone.

MS. RICHARDSON: I can start with a simple one on communications. Our primary form of communications on some topics didn't work the way we had planned, and we had to find alternate communication. So while I think it went well, we were able to do that, and we had those alternatives available, the primary form that we planned on using didn't work.

MR. MORRIS: Okay. Communications, obviously, is essential. And in your world, Rebecca,

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we're talking about not just unclassified, but potentially classified and sensitive information, and how you communicate that information when you've got degraded systems.

Others?

MR. OVERLY: One of the things that I think could have gone better for us is, while we were getting generators in place, hooking those generators into some of our buildings that don't normally have generators.

In other words, having quick disconnects for connection points to where we can actually put those generators. Or actually having permanently installed generators in some of our support buildings that we didn't have at the time, especially our supply warehouse, for one.

The others, I won't get into a lot of our security plan, but we have security posture locations that need electrical in those locations. So having quick disconnects and other accommodations to restore power a little quicker.

From a response standpoint, we have a corporate Emergency Response Center basically. And while we did a lot of things virtually, we did not

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activate that facility sooner prior to the hurricane arrival. So we took that as lesson learned that we could have activated it a little sooner, and gotten some of our resources and our communications a little clearer and crisper ahead of the response.

And then our shutdown time. With the storm speeding up, we took a hard look back at our procedural requirements, the storm arrival time, and how the storm speeding up may have cut into our decision-making time.

So we're looking at, again, embracing our risk/probability of one. And taking a hard look at: do we need to shut down a little sooner than what we did during the event? We always take a hard look at ourselves and see where we can improve. Those are some of the areas that we could really improve in.

MR. MORRIS: Okay. Thanks, John.

FEMA, Oscar or Linda, any surprises or things that maybe didn't go as well as you anticipated?

MR. MARTINEZ: Like Ms. Richardson was saying, communication was a big issue that we were having to deal with at the time right after the hurricane made landfall. The lack of phones, cell

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service, and internet service provided a challenge for us to communicate with some of our state partners and some of the off-site emergency response organizations. Some folks had to switch to ham radios or satellite phones.

And there were even occasions where some of our points of contact for the state and local stakeholders that we had, some of those folks even had to evacuate due to the locations they were at. So some of the staff that we generally speak to during these events weren't in the areas. Some of them even had to evacuate to North Texas just for a day or two in order to let the hurricane pass.

So those were some of the difficulties that we had trying to establish that communication.

MR. MORRIS: You mentioned some of the communication options that you had to employ.

The question from the audience, what other secondary communications did we wind up having to use or not use, maybe some of which were anticipated and baked into response plans, maybe some weren't? Any thoughts on that?

MR. MARTINEZ: As far as from FEMA goes, obviously we do have some communication plans already

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established, such as satellite phone numbers and stuff like that. We do have different radio options that each state has with them. We have different UHF/VHF type radio communication methods, if that is needed.

So yes, just generally, our GETS cards and our WPS ability for some of those folks that had to -- because of the lack of cell towers and stuff, there was a lack of lines and such. So there were some folks that had to utilize their GETS cards and stuff in order to bump them up to the front of the line so they could use some of those communication methods to reach out to us.

So those were just some different ones. Because the plans that we have that we prepare for all year long have multiple redundant systems built into that, and we review those plans annually, that did actually play out for us. So that did help us.

MR. MORRIS: Yes. Thank you. Some folks may not know what a GETS is. It stands for Government Emergency Telephone System. And WPS is Wireless Priority Service. The federal response community has access to these tools to enable us to get priority service on the cell towers and priority

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access to normal telephone communications in an emergency. So that's what Oscar is referring to there.

Back to you, Ryan. There's a question. You mentioned the five criteria that the NRC used that needed to be satisfied before exiting from the Activation mode.

The question from the audience is, are those criteria kind of made up on the fly or are they captured in some standard process? How does that work?

MR. LANTZ: Yes. Thanks for that question. They are all dependent on the specifics of the incident that is going on. Obviously, safety is paramount. That's our charge as the Nuclear Regulatory Commission. Everything that we do is based on ensuring safety is maintained at the site.

So that's the paramount consideration. But the particulars of the specific event will drive some of the other criteria.

So are they made up on the fly? I guess I would say sort of, that's correct. There's nothing written down that says you have to have this thing. There are minimums, and that's our safety standards,

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regulations, technical specifications. But the others are really driven by the specific event.

And there's a lot of communication and consideration when should we leave Activation mode. Public confidence is a huge aspect, and our confidence that the site is doing everything they need to to ensure safety is probably the secondary.

MR. MORRIS: Okay. Thank you. It was mentioned earlier, Hurricane Andrew back in 1992 impacted the Turkey Point facility in Southern Florida. It was a pretty significant event, a lot of lessons learned from that.

A question from the audience is, it's been 30 years since then. What lessons from that event were incorporated into the response of this or other planning documents? I can start with John, or anyone, but let's start with John.

MR. OVERLY: All right. Thank you, Scott.

From a Waterford and an Entergy perspective, Hurricane Andrew was obviously an eye-opener for the entire industry, but especially the Gulf plants and coastal plants.

We really took a lot of those lessons --

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if you look at our severe weather procedure currently, a lot of our on-site facilities, equipment, and protocols, all of those are in place because of the lessons that we learned from Hurricane Andrew. So we actually took all of those lessons line by line, looked at them, and pretty much to a T adopted those activities.

That's why we have these pre-hurricane conferences. That's why we have these relationships with the NRC, the state, FEMA, and the parishes in place. That's why we have third and fourth layers of communication systems, because communication is vital in a disaster. So yes, we really adopted a lot of those things and put them in place.

MR. MORRIS: Thanks. How about from FEMA's perspective? Obviously, FEMA is charged with responding to all manner of events. And certainly since Hurricane Andrew 30 years ago, there have been a lot of other hurricanes, a lot of other disasters, and superstorms.

Sandy rings a bell for me. About ten years ago, it hit the Northeast and affected a lot of infrastructure and nuclear. To what extent have those lessons been incorporated into FEMA's response

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protocols?

MR. MARTINEZ: Well, that was quite some time ago, way before my arrival here at FEMA. But I will say that just in general, after every disaster that we have in FEMA, whether it's a manmade disaster or a natural disaster, we constantly do reviews and after-actions of what has occurred, and implement any new changes or make any improvements to the processes that we have.

I would say since 1992 to now, we've obviously made several; not only communication changes, but relationship changes. Obviously, improved relationships with various federal agencies. And now in 2022, we have outstanding relationships with the NRC and our other federal partners that allow us to respond in the most rapid way that we can.

So again, I can't really speak to the huge improvements from 1992 to now, but I can say that we're always striving to make sure that we're implementing new changes. Especially with technology, the way technology is now; again, various social media platforms and different web platforms, WebEOC, Adobe Connect, different things like that.

We try to utilize our watch centers that

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we have within FEMA to assist all the different divisions in FEMA. And our National Preparedness Branch, which is what houses our Tech Hazards Branch responsible for that, are constantly doing different community outreaches and stuff like that. So preparedness is the key for us here.

MR. MORRIS: Absolutely. Thanks, Oscar. You mentioned the after-action report. And maybe I'll put this to Ryan.

To what extent did the action formerly capture the lessons from this particular event? And are those lessons -- how are they shared? Are they publicly available? How do we as a country benefit from these lessons?

MR. LANTZ: Thanks, Scott. I did want to mention Hurricane Andrew before we move on to that question. That was a watershed event. And I actually remember Hurricane Andrew. I was in the Nuclear Regulatory Commission when that event occurred.

We took several lessons learned. One was coordinating with FEMA. I believe the disaster-initiated review was actually an outfall of Hurricane Andrew. We formalized a process in our memorandum

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of understanding and coordination with FEMA for responding to sites that had to shut down because of some external event, such as a hurricane.

And also, that was the NRC's first inkling that we needed to have a common terminology and vocabulary with off-site authorities in their response mode. It took quite a long time for NRC to get there, but we finally have the same terminology of responders, such as a response director or an operations sections chief. We use those terminologies now that off-site authorities -- police, fire -- have been using those terms for quite some time.

Now to the question of the after-action report. We did capture the lessons learned from this, so they are in an after-action report. And I believe that's publicly available, although I'm not completely confident in that answer.

Each one of these events is an opportunity to capture lessons learned. They are captured. Maybe Rebecca can talk about that quite a bit more. Those lessons are used to inform our response methodology and procedures, to improve our response and make it more efficient.

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MR. MARTINEZ: I'll say -- and this is Oscar from FEMA -- like Ryan said, those after-actions -- currently, we do have a draft after-action for Hurricane Ida and for that event in an improvement plan that we implement in collaboration with the off-site response organizations as well as the NRC. We share that draft with each other before we finalize that.

MR. MORRIS: Thanks.

MS. RICHARDSON: I can add onto that. The after-action report, it does get added to our Corrective Action Program database so that we can find resolution for those items and adjudicate those so that we're ready for the next time. That did occur.

MR. MORRIS: Excellent. So I think it's fair to say, then, that it's an iterative process, this continuous learning that happens. And ultimately, the programs and protocols that are employed to effectively prepare and respond to disasters like Hurricane Ida are captured and continually evolving in our formal documentation.

Of course, people change; people take on new roles. So it's really imperative not only to

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have quality procedures, programs, and documents that are revised regularly to account for lessons learned, but it takes a whole lot of continuing, ongoing effort as people change, as circumstances change, as technologies change, to continue to train our response professionals, many of whom in the NRC all speak for the NRC.

This isn't their day job. This is something that they do when the NRC enters that Activation mode that normally they're inspectors, license reviewers, you name it. And they all volunteer to support a response, should it be necessary, but it's not their day job. You can have great programs and procedures, but it ultimately takes people to implement them.

Ryan, I'll start with you. What do we do to make sure that this volunteer -- obviously, there are some permanent staff who focus on preparedness and response. But the vast majority of the response organization is volunteer. What do we do to make sure that when the bell rings, so to speak, that we, the agency, can effectively mount a response?

I'll also throw that question to

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everybody, to John and FEMA.

MR. LANTZ: Thanks, Scott. As far as the on-call responders, the NRC doesn't really have any on-call responders. All of ours are permanent folks. I know FEMA will talk about on-call folks.

But obviously, we have a continuing training program as well as the initial training program that talks about emergency response. We have inspectors and managers who are trained. And we exercise. Every two years, at every plant in the country there is a biennial exercise that we evaluate and FEMA participates in. And we receive those reports and see the lessons learned from those.

Every six years we'll participate in some manner at a site, at every site every six years. We have our whole response organization that actually practices. So that comes out to two or three times a year we are in an exercise that involves the entirety of the Nuclear Regulatory Commission and a site.

There are other national exercises that are done periodically every year that exercise beyond the NRC and FEMA, other federal agencies, to participate in a response drill. So multitudes of

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training opportunities there to make sure both our new staff and our experienced staff continue to have the ability to implement our emergency response.

MR. MORRIS: Yes. Thanks for that. And interestingly, when those biennial exercises are being conducted at the power reactor sites, NRC is really wearing two hats, two roles, two functions. One of which is what you just described, which is enhancing the training and proficiency for our staff in how to implement our response program.

But there's a regulatory piece too. During those exercises we've also got our regulatory hat on, making sure the licensee is doing all the things they need to do to be successful in responding to an event.

So with that, John, did you want to weigh in on this? We only have about four minutes left in the session. You're on mute, John.

MR. OVERLY: I'm sorry. I think we've covered the vast majority of the points I wanted to make on that, but thank you.

MR. MORRIS: Okay. Oscar or Linda, any thoughts on that?

MR. MARTINEZ: FEMA does have a reservist

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on-call program that's separate from us in our REPP program. But as far as the reservists go, FEMA does hire and seek out individuals to help with those responses. And then in the time of a disaster or need, they will call up some of those reservists and give them opportunities to assist with that.

As far as the REPP program within FEMA, we do annual DIR tabletop exercises that move from one region to another. Here in Region 6 that covers Louisiana, we participated in 2020 with that tabletop exercise for the DIR there.

We also have standard operating guides and different things that guide us on preparedness and training for that. So really, for us it's a constant training all year long with our off-site response organizations and our state. So that's kind of how we do that.

MR. MORRIS: Okay. Well, we're here at the end of the program. So I want to just thank all of you for participating and joining in today's panel.

I thought it was a good, comprehensive overview of all the aspects of the response to Hurricane Ida at Waterford, and all the implications

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of that at the licensee's site, within the federal government. Again, a very big thanks to all the panelists this morning.

And thanks to the audience for your participation and your questions. It's our hope that this was informative and interesting, and you took some good lessons from this event so that we can be even better in the future.

With that, I will bang the gavel and close the session. I wish you all a good rest of the Regulatory Information Conference. Thanks, everybody.

(Whereupon, the above-entitled matter went off the record at 9:58 a.m.)